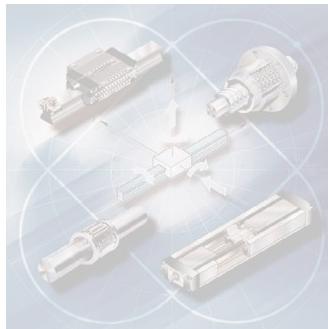


GoTo Canada Focused Delivery Program Electric Drives and Controls



The products you
need—when you
need them

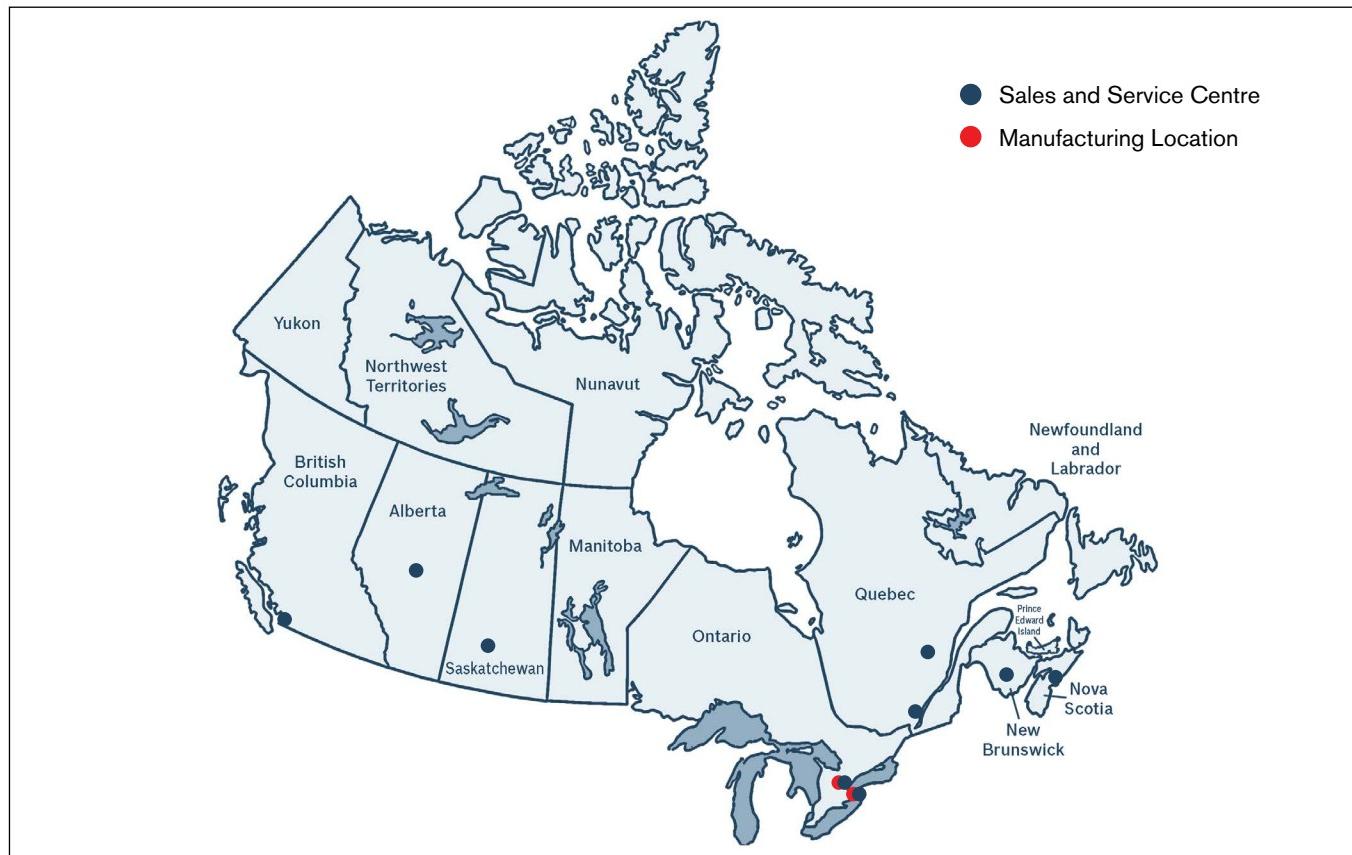
Electric Drives and Controls GoTo Catalog, Canada Edition

Bosch Rexroth is pleased to provide our Automation GoTo Product catalog as part of our GoTo Focused Delivery Program. The GoTo Program provides you with fast delivery of the industry's most widely used automation products, and lets you "go to" quick reference internet pages for more information,

technical specifications, and ordering details.

For additional information on the GoTo Program and a complete list of other quality Rexroth products available in the focused delivery program go to: www.boschrexroth.ca/GoTo.

Bosch Rexroth Canada Locations



Bosch Rexroth Canada

Headquarters

490 Prince Charles Drive South
Welland, ON L3B 5X7
Phone 905-735-0510
Fax 905-735-5646
www.boschrexroth.ca

Regional Sales and Service Centres

5345 Goring Street
Burnaby, BC V5B 3A2
Phone 604-205-5777
Fax 604-205-6944

8035 Coronet Road
Edmonton, AB T6E 4N7
Phone 780-466-5466
Fax 780-463-0964

235 Venture Crescent
Saskatoon, SK S7K 6N8
Phone 306-242-1172
Fax 306-242-5754

3426 Mainway Drive
Burlington, ON L7M 1A8
Phone 905-335-5511
Fax 905-335-4184

725 rue Delage
Longueuil, QC J4G 2P8
Phone 450-928-1111
Fax 450-928-0903

2691 Blvd du Royaume
Saguenay, QC G7X 7V3
Phone 418-548-2366
Fax 418-548-4238

385 Wilsey Road, Unit 10
Fredericton, NB E3B 5N6
Phone 506-458-1004
Fax 506-458-5534

94 Trider Crescent
Dartmouth, NS B3B 1R6
Phone 902-468-4500
Fax 902-468-2228

Bosch Rexroth Canada

Manufacturing

490 Prince Charles Drive South
Welland, ON L3B 5X7
Phone 905-735-0510
Fax 905-735-5646

3426 Mainway Drive
Burlington, ON L7M 1A8
Phone 905-335-5511
Fax 905-335-4184

GoTo Focused Delivery Program

The GoTo Focused Delivery Program streamlines everything to make it easier for you to get a selection of our most popular Rexroth products faster. You'll benefit from quicker access to product information, reliable lead times that meet or beat the expectations of the market, simplified pricing and enhanced

customer service. Go to our website at:
www.boschrexroth.ca/GoTo for information on GoTo products from among all of Rexroth's technologies.
It's the fastest and easiest way to get started on your next application.

Distributed by:

**For our complete product portfolio please visit our website at:
www.boschrexroth.ca and select "Products" or
contact the Bosch Rexroth local regional sales office**

GoTo Program Delivery Conditions

- Current GoTo program content and guidelines are specified at: www.boschrexroth.ca/GoTo
- How to Order: Please state clearly for each line item on the purchase order that GoTo lead times are required.
- Orders for products exceeding the current program quantity limits may be acknowledged with extended delivery.
- Items listed in this catalog will be shipped from Bosch Rexroth within the time frame stated in this catalog. For urgent delivery requirements, please check with your local sales office.

- Order via the Rexroth Sales Offices listed on the inside front cover.

All items subject to prior sale. It is advisable to confirm critical delivery requirements at time of order. All sales subject to Bosch Rexroth Canada Terms & Conditions of sales, which you can read at:

www.boschrexroth.ca/terms

Bosch Rexroth reserves the right to make program changes at any time without notice.

WARNING!

Failure, improper selection or improper use of the products and/or systems described herein or of related items may cause personal injury or property damage.

This document and other information from Bosch Rexroth and its divisions provide products and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the products or systems in Rexroth's Data Sheets. Due to the variety of operating conditions and applications for these products or systems, the user, through his own analysis and testing, is solely responsible for making the final selection of the products and systems, and assuring that all performance, safety and warning requirements are met.

The products described herein, including without limitation, product features, specifications, designs and pricing are subject to change at anytime without notice.

Table of Contents

	Page No.
Drive Systems	
Drives (IndraDrive Cs, IndraDrive C)	7
Motors (IndraDyn S)	15
Motion Control PAC	
IndraControl L	16
IndraMotion MLC	17
I/O	
Inline – Cabinet Mount (IP20)	
Power Modules	18
Bus Couplers	19
Digital Input Modules	20
Digital Output Modules	21
Analog Input Modules	23
Analog Output Modules	24
Temperature Modules	25
HMI	
Standard HMI	26
Part Numbers	27

Liability:

In no event can the manufacturer accept warranty claims or liability claims for damages resulting from improper use or misuse of the equipment or as a result of changes made to the equipment other than those authorized by the manufacturer. The manufacturer will accept no claim in which non-original spare parts have been used.

©2012, Bosch Rexroth Corporation

All rights are held by ROBERT BOSCH GMBH and BOSCH REXROTH CANADA, also regarding patent claims. **We reserve the right to make technical changes at any time without notice.** Errors and omissions excepted.

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive Cs



The IndraDrive Cs is a servo drive that features a compact space-saving design. Selectable Multi-Protocol Ethernet command interface provides the flexibility of choosing any open Ethernet controller for the system, SERCOS III for example. A Multi-encoder interface allows use of the platform with virtually any motor technology, for instance torque or linear motor technologies.

Features

- Extremely compact design
- Ethernet-based communications, multi-protocol support: SERCOS III, Profi Net IO, EtherNet/IP and EtherCat
- Innovative multi-encoder interface: Hiperface®, EnDat 2.1, 1Vss, 5 V TTL, and Rexroth MSM and MSK servo motors
- Energy efficient product - DC bus sharing
- Standard , Servo and Synchronization modes available
- Complete range of scalable drives
- Compatible with the IndraDrive family
- Digital inputs/outputs and analog input on board
- Intelligent operating panel with programming function supports device swap without a PC
- Integrated brake resistor, alternative an external brake resistor can be connected

Technical Data

Models	HCS01.1E-W0018-A-03		HCS01.1E-W0028-A-03
Performance data			
Mains voltage	V	3 AC 200 ... 500 V	
Continuous current	A _{eff}	7.6	11.5
Maximum current	A _{eff}	18	28
Maximum output without/with choke	kW	1.7 / –	2.6 / 4.0
Mechanical data			
Width W	mm	70	
Height H (max)	mm	268	
Depth D (max)	mm	220	
Mass	kg	1.6	

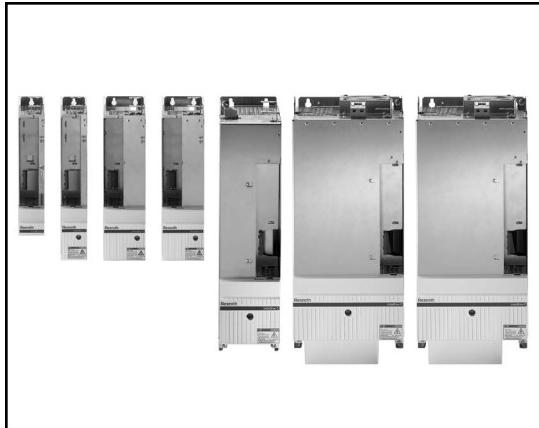
Available Firmware Options

FWA-INDRV*-MPB-16VRS-D5-1-ALL-NN	Basic closed loop 16VRS with the possibility to select synchronization, servo or main spindle extension set
FWA-INDRV*-MPB-17VRS-D5-1-NNN-NN	Basic closed loop 17VRS without the possibility to select synchronization, servo or spindle extension set
FWA-INDRV*-MPB-17VRS-D5-1-SNC-NN	Basic closed loop 17VRS with synchronization only extension set
FWA-INDRV*-MPB-17VRS-D5-1-ALL-NN	Basic closed loop 17VRS with the possibility to select synchronization, servo or spindle extension set
FWA-INDRV*-MPB-17VRS-D5-1-ALL-ML	Basic closed loop 17VRS with the possibility to select synchronization, servo or spindle extension set and MLD master

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive C

Power Sections



IndraDrive sets new standards in drive technology with a combination of three product advantages: scalability in power and functionality, consistency in technology, engineering and operation and openness in communication. The IndraDrive C series of converters integrate inverter and power supply in one unit. The compact construction contains additional mains connection components, making it particularly suitable for single and multi axis applications.

Features

- Ethernet-based communications, multi-protocol support: SERCOS III, Profi Net IO, EtherNet/IP and EtherCat
- Compact converters and modular inverters on one platform
- Integrated motion logic with IEC-compliant PLC
- Drive-integrated safety technology
- Energy efficient product - DC bus sharing
- Standard, Servo and Synchronization modes available
- Complete range of scalable drives
- Digital inputs/outputs and analog input on board
- Intelligent operating panel with programming function supports device swap without a PC
- Integrated brake resistor, alternative an external brake resistor can be connected

Technical Data

Models		HCS02.1E-W0012	HCS02.1E-W0028	HCS02.1E-W0054	HCS02.1E-W0070
Performance data					
Mains voltage	V		3 AC 200 ... 500 V		
Continuous current	Aeff	4.5	11.3	20.6	28.3
Maximum current	Aeff	11.5	28.3	54	70.8
Maximum output without/with choke	kW	5/5	8/10	12/16	14/19
Mechanical data					
Width W	mm	65	65	105	105
Height H (max)	mm	290		352	
Depth D (max)	mm		252		
Mass	kg	2.9	3.8	6.7	6.8

continued on next page

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive C (continued)

Power Sections

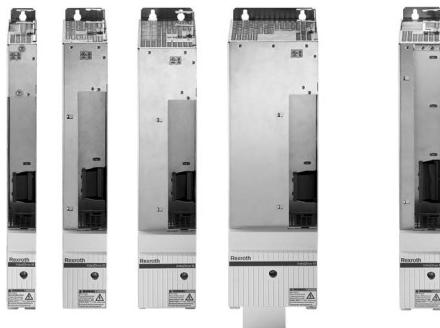
Technical Data (continued)

Models		HCS03.1E-W0070 -A-05-NNBV	HCS03.1E-W0100 -A-05-NNBV	HCS03.1E-W0150 -A-05-NNBV
Performance data				
Continuous current	A	45	73	95
Maximum current	A	70	100	150
DC bus continuous power without/with choke	kW	13/25	24/42	34/56
Maximum output without/with choke	kW	20/40	33/59	54/89
Mains voltage	V	3 AC 400 to 500 (+10%/-15%)		
Continuous input mains current	A	50	80	106
Dependence of output on mains voltage		at $U_{LN} < 400$ V: 1% power reduction per 4 V decrease in voltage		
DC bus terminal		*	*	*
DC bus capacity	μF	940	1,440	1,880
Brake chopper				
Permanent braking power	kW	13.2	18.9	25.2
Maximum braking power	kW	42	63	97
Control voltage data				
Control voltage, internal	V	DC 24 (not for supply of motor holding brake)		
Control voltage, external	V	DC 24 $\pm 20\%$ (DC 24 $\pm 5\%$ when supplying motor holding brake)		
Power consumption without control unit & motor brake	W	22.5	25	
Continuous current without control unit & motor brake	A	0.9	1	
Mechanical data				
Width W	mm	125	225	225
Height H (max)	mm		440	
Depth D (max)	mm		315	
Weight	kg	13	20	20

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive M

Inverters

	<p>Multi-axis solution with power supplies and inverters.</p> <p>Multi-axis applications are the domain of the modular system IndraDrive M. Power supplies provide the necessary DC bus voltage for the inverters. Compact single-axis or double-axis inverters and power supplies with integrated mains connection components enable compact solutions for large axis groups.</p>
-----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

- Single-axis inverter with maximum current from 20 A to 350 A
- Double-axis inverter with maximum current from 12 A to 36 A
- Space-saving design for multi-axis applications
- Can be powered via power supply unit or converter
- Energy exchange via common DC bus
- Can be connected to a converter for cost-effective solutions

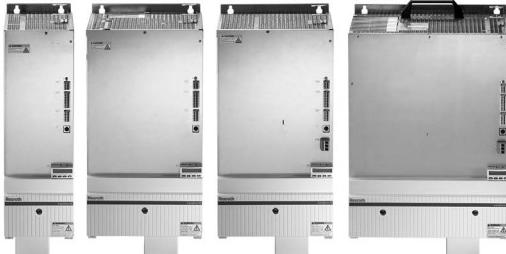
Technical Data

Models	HMS01.1N-W0036 -A-07-NNNN	HMS01.1N-W0054 -A-07-NNNN	HMS01.1N-W0070 -A-07-NNNN	HMS01.1N-W0150 -A-07-NNNN	HMD01.1N-W0036 -A-07-NNNN
Performance data					
Continuous current	A	21.3	35	42.4	100
Maximum current	A	36	54	70	150
Control voltage data					
Control voltage, external	V	DC 24 ±20% (DC 24 ±5% when supplying motor holding brake)			
Power consumption without control unit and motor brake	W	15	10	16	23
Continuous current without control unit and motor brake	A	0.7	0.4	0.7	1.0
Mechanical data					
Width W	mm	50	75	100	150
Height H (max)	mm	440			
Depth D (max)	mm	309			
Weight	kg	5.3	6.7	7.9	12.7
		7.5			

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive M

Power Supply

	<p>Maximum energy efficiency can be achieved with power supplies that are capable of mains regeneration. Beside the power recovery encountered in regenerative operation of the drives, these devices also feature sinusoidal line currents, an overall power factor of 0.99 and a closed-loop DC bus.</p>
-----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

- Power range from 15 kW to 120 kW
- Direct mains connection from 400 V to 480 V
- Energy-saving line regeneration
- Integrated mains contactor
- Integrated brake resistor

Technical Data

Models		HMV01.1E-W0030 -A-07-NNNN	HMV01.1E-W0075 -A-07-NNNN	HMV01.1R-W0045 -A-07-NNNN	HMV01.1R-W0065 -A-07-NNNN	HMV01.1R-W0120 -A-07-NNNN
Performance data						
DC bus continuous power without/with choke	kW	18/30	45/75	-/45	-/65	-/120
Maximum output	kW	45	112	112	162	180
Mains voltage	V	3 AC 400 to 480 (+10%/-15%)				
Continuous input mains current	A	51	125	65	94	181
Dependence of output on mains voltage		at $U_{LN} < 400$ V: 1% power reduction per 4 V				
		at $U_{LN} > 400$ V: 1% power gain per 4 V		at $U_{LN} > 400$ V: no power gain		
DC bus capacity	μ F	1,410	3,760	1,880	2,820	4,950
DC bus voltage range	V	DC 435 to 710		DC 750 (regulated)		
Brake resistor						
Brake resistor		Internal				External
Maximum braking energy consumption	kWs	100	250	100	150	–
Permanent braking power	kW	1.5	2	0.4	0.4	–
Maximum braking power	kW	36	90	90	130	–

continued on next page

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive M (continued)

Power Supply

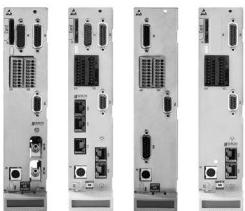
Technical Data (continued)

Models	HMV01.1E-W0030 -A-07-NNNN	HMV01.1E-W0075 -A-07-NNNN	HMV01.1R-W0045 -A-07-NNNN	HMV01.1R-W0065 -A-07-NNNN	HMV01.1R-W0120 -A-07-NNNN
Control voltage data					
Control voltage, internal	V		DC 24 ±5%		
Power consumption	W	25	30	41	108
Continuous current	A	1	1.3	1.9	4.5
Mechanical data					
Width W	mm	150	250	250	350
Height H (max)	mm			440	
Depth D (max)	mm			309	
Weight	kg	13.5	22	20	31
					34.5

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive

Control Sections

	<p>We can supply control units tailored to your specific application, ranging from standard to high-end applications. Integrated motion logic, numerous technology functions, certified safety technology and standardized interfaces leave nothing to be desired.</p> <p>The correct interface for connecting the IndraDyn motors or other standardized encoders, such as Hiperface®, is already integrated.</p>
-----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

- ADVANCED control units meet the highest demands in performance and dynamics.
- Signal transfer via fiber optics guarantees the secure exchange of real-time data with minimal wiring.
- Conventional ± 10 V analog interface
- Digital inputs/outputs and analog input on board
- Standard, Servo and Synchronization modes available
- Intelligent operating panel with programming function supports device swap without a PC
- Scalable performance and functionality
- An additional plug-in MultiMediaCard gives you the option of simple transmission or duplication of your drive parameters.
- A standard encoder interface for IndraDyn motors is already featured among the BASIC control units.
- Integrated motion logic with IEC-compliant PLC
- Drive-integrated safety technology

Available Hardware Options

Overview	Basic Open Loop	Basic Analog	Basic PROFIBUS	Basic Sercos	Basic Universal	Advanced
Control communication						
Analog/digital for Open Loop operation	●	—	—	—	—	—
Analog interface	—	●	—	—	—	○ ¹⁾
Parallel interface	—	—	—	—	○	○
PROFIBUS	—	—	●	—	○	○
sercos II	—	—	—	●	○	○
sercos III	—	—	—	—	○	○
Multi-Ethernet	—	—	—	—	○	○
CANopen	—	—	—	—	○	○
DeviceNet	—	—	—	—	○	○
Configurations						
Option 1	—	● ²⁾	● ²⁾	● ²⁾	● ²⁾	●
Option 2	—	—	—	—	●	●
Option 3	—	—	—	—	—	●
Safety option	—	●	●	●	●	●
Slot for MultiMediaCard	—	—	—	—	●	●

● Standard
○ Optional

1) In conjunction with additional options
2) Encoder interface for IndraDyn motors

3) Only with sercos III and EtherCAT
4) Supply voltage 12 V

continued on next page

GoTo Focused Delivery Program: Drive Systems

Drives – IndraDrive (continued)

Control Sections

Available Hardware Options (continued)

Encoder interfaces						
IndraDyn motors MSK, MKE, MAD and MAF, Hiperface®, 1 V _{pp} and 5 V TTL ⁴⁾	–	●	●	●	●	○
MHD and MKD motors	–	–	–	–	○	○
EnDat 2.1, 1 Vpp	–	–	–	–	○	○
Safety options compliant with EN 13849-1 and EN 62061						
Safe Torque Off (category 3 PL e/SIL ³⁾	–	○	○	○	○	○
Safe Motion (category 3 PL d/SIL ²⁾	–	–	–	–	–	○
Extensions						
Encoder emulation	–	●	–	–	○	○
Analog I/O extension	–	–	–	–	○	○
Digital I/O extension	–	–	–	–	–	○
Digital I/O with SSI interface	–	–	–	–	–	○
Cross communication	–	–	–	–	–	○
Software module						
MultiMediaCard	–	–	–	–	○	○
Operator panel						
Standard	●	●	●	●	●	●
Cycle times						
Current control	[μs]	125				62.5
Speed control	[μs]	250				125
Position control	[μs]	500				250
PWM frequency						
4/8 kHz		●/●	●/●	●/●	●/●	●/●
12/16 kHz		–/–	–/–	–/–	–/–	●/●
Inputs/outputs						
Digital inputs/of which utilizable for probes		8/–	5/–	5/1	5/1	7/2
Digital inputs/outputs (user-defined settings)		–	4	3	3	4
Analog inputs		2	2	–	–	1
Analog outputs		2	–	–	–	2
Relay outputs		3	1	1	1	1
Interfaces						
RS232		●	●	●	●	●
Control voltage data						
Control voltage	[V]	DC 24				
Power consumption without options	[W]	7.5	8	7.5	7.5	6.5
Continuous current without options	[A]	0.31	0.33	0.31	0.31	0.27

- Standard 1) In conjunction with additional options
- Optional 2) Encoder interface for IndraDyn motors
- 3) Only with sercos III and EtherCAT
- 4) Supply voltage 12 V

Available Firmware Options

FWA-INDRV*-MPB-05VRS-D5-1-NNN-NN	Basic closed loop 05VRS without the possibility to select synchronization, servo or main spindle extension set
FWA-INDRV*-MPB-05VRS-D5-1-SNC-NN	Basic closed loop 05VRS with synchronization only extension set
FWA-INDRV*-MPB-07VRS-D5-0-NNN-NN	Basic open loop 07VRS
FWA-INDRV*-MPB-07VRS-D5-1-NNN-NN	Basic closed loop 07VRS without the possibility to select synchronization, servo or main spindle extension set
FWA-INDRV*-MPB-07VRS-D5-1-SNC-NN	Basic closed loop 07VRS with synchronization extension set
FWA-INDRV*-MPC-07VRS-D5-1-SNC-ML	Advanced closed loop 07VRS with synchronization extension set for MLD master (software module PFM...-FW reqd.)
FWA-INDRV*-MPC-07VRS-D5-1-ALL-MA	Advanced closed loop 07VRS with all extension sets for MLD master (software module PFM...-FW required)

Software module

MultiMediaCard - PFM02.1-016-FW	Optional with Basic Universal and Advanced control sections Required for control sections and MPC-firmware with MLD master
---------------------------------	-------------------------------------------------------------------------------------------------------------------------------

GoTo Focused Delivery Program: Drive Systems

Motors – IndraDyn S

MSK Motor



The particularly outstanding features of the MSK range of motors are its wide power spectrum and narrow size increments. The high torque density of these synchronous servo motors allows a particularly compact design with maximum torques of up to 495 Nm.

A number of further options, such as the shaft keyway, holding brake, reduced runout and the high protection category IP65 mean that they can be used in virtually any application.

Features

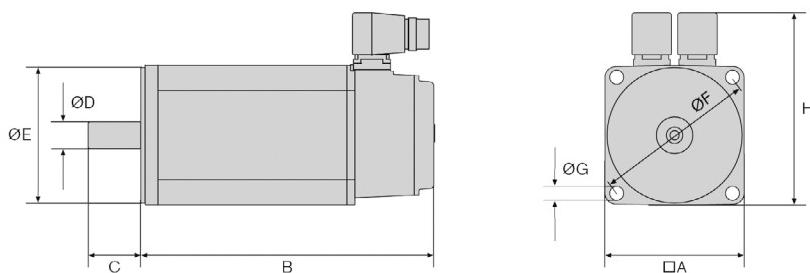
- Motors with the highest level of efficiency
- High protection category IP65
- Multi-turn encoder (Hiperface®) – 128 increments with 4,096
- Encoder systems for a wide and diverse range of applications
- Digital type plate and parameter memory

Performance Data

Type	Maximum speed nMax (1/min)	Continuous torque at standstill M0 (Nm)	Maximum torque MMax (Nm)	Continuous current at standstill I0 (A)	Maximum current IMax (A)	Moment of inertia J (kgm ²)
MSK040C-0600	7,500	2.7	8.1	3.1	12.4	0.00014
MSK061C-0600	6,000	8	32	7.7	34.7	0.000752
MSK070D-0300	4,900	17.5	52.5	11	33	0.00375
MSK100D-0300	3,000	48	187	20.7	93.2	0.035
MSK101E-0300	4,600	70	231	41.6	187.4	0.0138

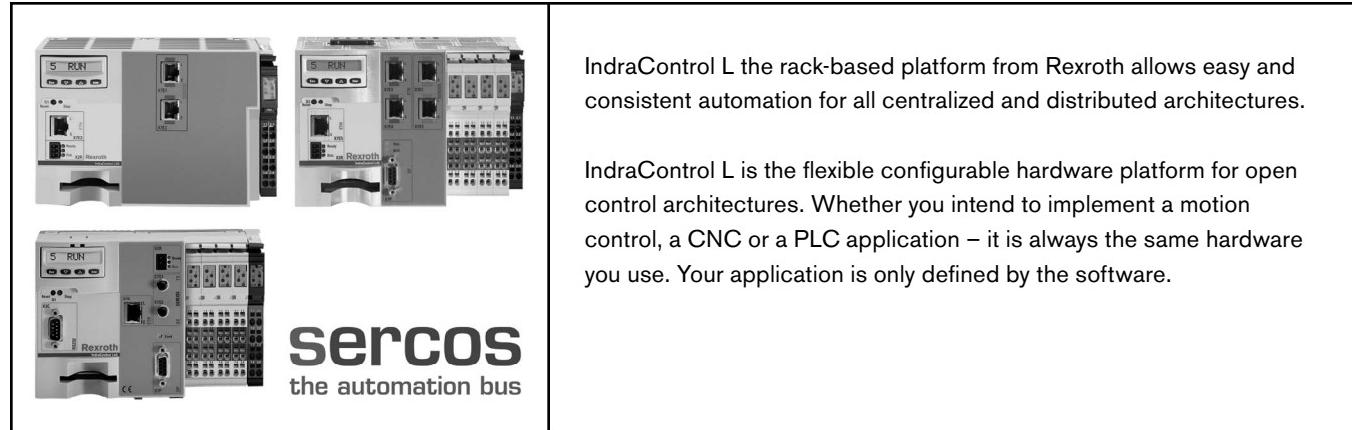
Dimensional Data

Type	A (mm)	B (mm)	C (mm)	Ø D (mm)	Ø E (mm)	Ø F (mm)	Ø G (mm)	H (mm)	Weight (kg)
MSK040C-0600	82	185.5	30	14	50	95	6.6	124.5	3.6
MSK061C-0600	116	264	40	19	95	130	9	156	8.3
MSK070D-0300	140	268	58	32	130	165	11	202	14
MSK100D-0300	192	502	60	32	130	215	14	211.5	56
MSK101E-0300	192	501	80	38	180	215	14	262	53.5



GoTo Focused Delivery Program: Motion Control PAC

IndraControl L



Features

- Scalable hardware platform
- Standardized communication interfaces
- Optional expansion through function and technology modules
- Ideal for centralized and distributed control
- Individually expandable with high-grade Human-Machine Interface (HMI) components
- Modular I/O units

Technical Data

Control hardware		L25 IndraLogic 2G	L45 IndraLogic 2G
Memory			
Application:		128 MB	256 MB
Retentive memory:		256 kB	256 kB
Buffered:		--	8 MB
Flash size:		1 GB	1 GB
Interfaces			
Ethernet:		1 x Ethernet TCP/IP (Standard)	
Ready:		1 x ready contact (Standard)	
Others		--	2 x Ethernet TCP/IP
I/O			
Digital inputs		---	8 DC-decoupled inputs (with interrupt capability)
Digital outputs		---	8 DC-decoupled outputs
Channels, used	Max.	256	
I/O extension	Max. no. of Inline modules	63	
	Max. no. of bytes	64	
Function Modules	Max.	2	4
Fieldbus			
Sercos:		1 x Sercos III	
ProfiNet:			1 x ProfiNet IO Controller/-Device (Option)
EtherNet/IP:			1 x EtherNet/IP Scanner/-Adapter (Option)
Profibus:		--	1 x Profibus-Master/-Slave

GoTo Focused Delivery Program: Motion Control PAC

IndraMotion MLC


sercos
the automation bus

		<p>IndraMotion MLC is the integrated controller-based system solution from Rexroth. It uses PLC programming according to IEC 61131-3 with object oriented programming such as: Function Block Diagrams (FBD), Ladder Diagrams (LD), Sequential Function Chart (SFC), and Structured Text (ST).</p>
		<p>The compact Rexroth IndraMotion MLC motion logic system gives you any freedom you wish for your consistent and modern machine automation. Innovative software and firmware functions, easy engineering and open system interfaces provide maximum flexibility in all motion applications.</p>

Technical Data

Control Hardware		MLC L45
PLC runtime system		
IndraLogic 1G kernel	Conforming with IEC 61131-3	---
IndraLogic 2G kernel	Conforming with IEC 61131-3 with extensions	•
Task management		
Freely projectable tasks (priority 0-20)	Cyclic, free-running, event-controlled, extern event-controlled	8
Cycle-synchronous processing of the I/O process image		•
sercos III synchronous processing of the I/O process image		•
min. PLC cycle time	Synchronous with system cycle	1 ms
min. Motion cycle time	Setpoint generator	1 ms
PLC processing time		
Typical processing time for 1,000 instructions/µs	Command mix (Real, Integer, Bool etc.)	30
	Bool-Operation	30
	Word-Operation	30
Motion Control		
Number of axes	Real, virtual, encoder, grouping	32
Synchronization (ELS – electronic line shaft)	real axes (Servo drives)	•
	Virtual axes (Virtual masters)	•
	Encoder axes (Real masters)	•
	real axes (Cross-communication)	•
	Dynamic synchronization	•
	Master axis cascading	•
Positioning	Single-axis	•
Electronic gears	Intermediate point tables (In the drive, max. 1,024 intermediate points)	4
	Electronic Motion Profile (in the output drive, motion profiles with max. 16 segments)	2
	FlexProfile (In the control, master-/time-based motion profiles with max. 16 segments)	4
Drive systems		
IndraDrive		•
IndraDrive Mi	Firmware MPB	•
IndraDrive Cs		•
EcoDrive Cs		•
SERCOS Pack-Profile		•
HNC100.3	Hydraulic drive	•

GoTo Focused Delivery Program: I/O

Inline – Power Modules

	<p>Compact modules utilizing spring-cage I/O connectors. Provide either 24 V DC to all PLC busses (Logic, Input, Output, Analog). Segment modules create separate “zone” of I/O to which power can be selectively cut-off.</p>
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

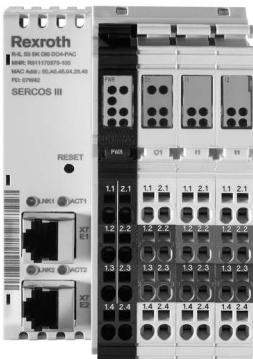
- 2 available DC power modules to add only the power needed
- Wiring terminals easily removed, to allow module replacement without rewiring
- Single power module can provide up to 8A of 24 V DC power to PLC busses

Technical Data

	R-IB IL PWR IN-PAC	R-IB IL 24 SEG/F-PAC	R-IB IL 24 SEG/F-D-PAC		
24-V power supply for generation of U_L and U_{ANA}					
Rated value	–	–	–		
Permissible range	–	–	–		
Power consumption at nominal voltage					
24-V module supply	–	–	–		
Logic supply	–	–	–		
Max. output current	–	–	–		
Analog supply	–	–	–		
Max. output current	–	–	–		
Rated value	24 V DC	Permissible total current in the potential terminals of the main and segment circuits			
Permissible range	19.2 to 30 V				
Permissible current	Max. 8 A				
Nominal terminal current	–	6.0 A			
Max. permissible value	–	8.0 A			
Electric data					
Transmission speed	500 kbaud				
Error message to the higher level control system	–		Yes		
Mechanical data					
Dimensions (W x H x D)	12.2 x 120 x 71.5 mm	12.2 x 120 x 71.5 mm			
Weight (without plug)	44 g				
Protection category	IP20				
Protection class	Class 3 according to VDE 0106, IEC 60536		–		
Safety classification	–		Class 3 according to VDE 0106, IEC 60536		
Accessories	Connectors and labels included				

GoTo Focused Delivery Program: I/O

Inline – Bus Couplers



Sercos III and Profibus I/O bus couplers available. Bus couplers provide network drops that are expandable with using the same Inline I/O that is used locally with a PLC.

Features

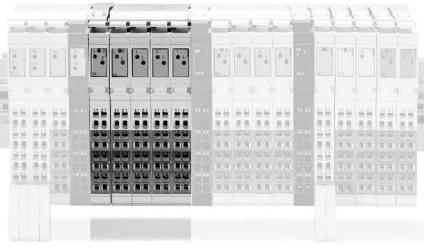
- Wiring terminals easily removed to allow module replacement without rewiring
- Sercos III bus coupler for an entire Sercos III fieldbus architecture
- Configurable network speeds

Technical Data

R-IL S3 BK DI8 DO4-PAC	
Communication	
Interfaces	Sercos III
System data	
Number of segments per station	Max. 63 (incl. 2 at bus coupler)
Total of all I/O data per station	Max. 244 bytes
Transmission speed in the local bus	500 kbaud
Digital outputs	
Number	4
Nominal output voltage UOut	24 VDC
Total current	2 A
Protection	Short-circuit, overload
Actuator connection type	2-, 3-wire connection
Digital inputs	
Number	8
Nominal input voltage UINom	24 VDC
Permissible nominal input voltage range	-30 < UINom < +30 VDC
Nominal input current at UINom	Typ. 3 mA
Permissible line length	30 m
Sensor connection type	2-, 3-wire connection
Mechanical data	
Dimensions (W x H x D)	80 x 121 x 70 mm
Protection class	Class 3 according to VDE 0106, IEC 60536
Accessories	
	Connectors and labels included

GoTo Focused Delivery Program: I/O

Inline – Digital Input Modules



	Modules of varying input counts, utilizing spring-cage I/O connectors. Buy only what you need. Only 24 V DC is available through GoTo program, but AC I/O is available.
--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

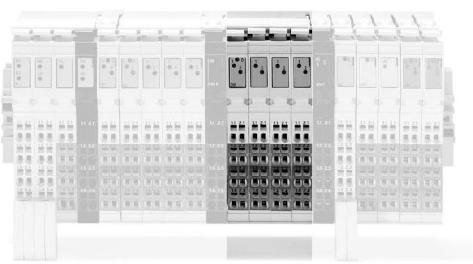
- Input modules with up to 32 inputs available
- EDI module includes diagnostic LEDs
- Wiring terminals easily removed, to allow module replacement without rewiring
- 2-, 3-, 4-wire inputs available depending on your needs

Technical Data

	R-IB IL 24 DI 8-PAC	R-IB IL 24 DI 16-PAC	R-IB IL 24 DI 32/HD-PAC
Digital inputs			
Number	8	16	32
Switching thresholds	max. voltage at low level U_{Lmax} max. voltage at high level U_{Hmax}	< 5 V > 15 V	< 5 V DC > 15 V DC
Common potentials	Segment supply, ground		
Nominal input voltage U_{INom}	24 V DC		
Nominal input current at U_{INom}	Min. 3 mA		
Delay time t_{On}	–		
Delay time t_{Off}	–		
Permissible line length	30 m		
Sensor connection type	2-, 3- or 4-wire connection		
Electric data			
Logic voltage U_L	7.5 V		
Power consumption from local bus U_L	50 mA	60 mA	90 mA
Nominal current consumption from U_S	Max. 2.0 A	Max. 4.0 A	–
Mechanical data			
Dimensions (W x H x D)	48.8 x 120 x 71.5 mm	48.8 x 141 x 71.5 mm	48.8 x 120 x 71.5 mm
Protection category	IP20		
Protection class	Class 3 according to VDE 0106, IEC 60536		
Accessories	Connectors and labels included		

GoTo Focused Delivery Program: I/O

Inline – Digital Output Modules



	Modules of varying output counts, utilizing spring-cage I/O connectors. Buy only what you need. 24 V DC, 120 V AC and 240 V AC available.
--	-------------------------------------------------------------------------------------------------------------------------------------------

Features

- Output modules with up to 32 outputs available
- Transistor, Triac, Relay outputs available
- Wiring terminals easily removed to allow module replacement without rewiring
- Single-, 2-, 3-, 4-wire outputs available depending on your needs

Technical Data

	R-IB IL 24 DO 8-PAC	R-IB IL 24 DO 8-2A-PAC	R-IB IL 24 DO 16-PAC	R-IB IL 24 DO 32/HD-PAC
Digital outputs				
Number	8	16	32	
Nominal output voltage U_{Out}		24 V DC		
Nominal current I_{Nom} per channel	0.5 A	2 A	0.5 A	
Total current	4 A	8 A (at 50 % synchronism)	8 A	
Protection				
Signal delay upon power on of	nominal resistive load (12 Ω/48 W)	Typ. 100 μs	Typ. 50 μs	Typ. 500 μs
	nominal lamp load (48 W)	Typ. 100 ms	Typ. 75 ms	Typ. 100 ms
	nominal inductive load (1.2 H, 12 Ω)	Typ. 100 ms	Typ. 50 ms	Typ. 100 ms
Signal delay upon power down of	nominal resistive load (12 Ω/48 W)	Typ. 1 ms	Typ. 500 μs	Typ. 1 ms
	nominal lamp load (48 W)	Typ. 1 ms	Typ. 500 μs	Typ. 1 ms
	nominal inductive load (1.2 H, 12 Ω)	Typ. 50 ms	Typ. 150 ms	Typ. 50 ms
Actuator connection type	2-, 3- or 4-wire	2-, 3- or 4-wire	2-, 3-wire	1-wire
Electric data				
Logic voltage		7.5 V		
Power consumption from local bus U_L	Max. 60 mA	Max. 60 mA	Max. 90 mA	Max. 140 mA
Segment supply voltage U_S		24 V DC (nominal value)		
Nominal current consumption from U_S	Max. 4 A (8 x 0.5 A)	Max. 8 A	Max. 8 A (16 x 0.5 A)	Max. 8 A (16 x 0.5 A or 32 x 0.25 A)
Error message to the higher level control system	Short-circuit/overload of an output	-	Short-circuit/overload of an output	

continued on next page

GoTo Focused Delivery Program: I/O

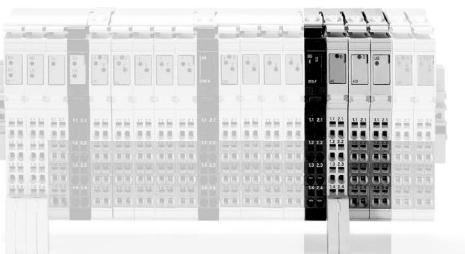
Inline – Digital Output Modules (continued)

Technical Data (continued)

	R-IB IL 24 DO 8-PAC	R-IB IL 24 DO 8-2A-PAC	R-IB IL 24 DO 16-PAC	R-IB IL 24 DO 32/ HD-PAC
Mechanical data				
Dimensions (W x H x D)	48.8 x 120 x 71.5 mm	48.8 x 120 x 71.5 mm	48.8 x 141 x 71.5 mm	48.8 x 120 x 71.5 mm
Protection category		IP20		
Protection class		Class 3 according to VDE 0106, IEC 60536		
Accessories		Connectors and labels included		
	R-IB IL 24/230 DOR 1/W-PAC	R-IB IL 24/230 DOR 4/W-PAC		
Relay output				
Number	1	1	4	4
Max. switching voltage		253 V AC, 250 V DC		
Max. switching capacity		750 VA		
Electric data				
Logic voltage U_L		7.5 V		
Power consumption from local bus U_L	Max. 60 mA	Max. 187 mA		
Operating mode: process data mode	2 bits	2 bits		
Transmission speed		500 kbaud		
Ambient conditions				
Permissible temperature (operation)		-25 to +55 °C		
Permissible temperature (storage)		-25 to +85 °C		
Permissible relative humidity (operation)		5 to 90 %		
Permissible relative humidity (storage)		5 to 95 %		
Mechanical data				
Dimensions (W x H x D)		12.2 x 120 x 71.5 mm		
Weight (without plug)		46 g		
Protection category		IP20		
Protection class		Class 3 according to VDE 0106, IEC 60536		
Accessories		Connectors and labels included		

GoTo Focused Delivery Program: I/O

Inline – Analog Input Modules

	<p>1 – 8 channel modules available. Spring-cage wired. Voltage and Current I/O available.</p>
-----------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------

Features

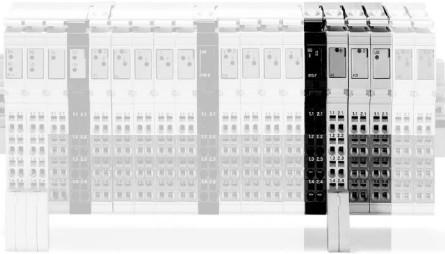
- Wiring terminals easily removed to allow module replacement without rewiring
- Adjustable resolution
- Programmable output formats
- High-speed processing available

Technical Data

R-IB IL AI 2/SF-PAC	
Analog inputs	
Number	2 analog single-ended inputs
Digital filtering (averaging)	Across 16 measurement values (can be switched off)
Conversion time of A/D converter	Typ. 120 µs
Voltage inputs	
Measuring ranges	0 to 10 V, ±10 V
Process data update of either channel	< 1.5 ms
Current inputs	
Measuring ranges	0 to 20 mA, ±20 mA, 4 to 20 mA
Process data update of either channel	< 1.5 ms
Max. permissible current in each input	±100 mA
Resolution	16 Bit
Sensor connection type	2-, 3-wire connection
Electric data	
Logic voltage U_L	7.5 V
Power consumption from local bus U_L	Typ. 45 mA
Peripheral supply voltage U_{ANA}	24 V DC
Power consumption at U_{ANA}	Typ. 12 mA
Mechanical data	
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm
Protection category	IP20
Protection class	Class 3 according to VDE 0106, IEC 60536
Accessories	Connectors and labels included

GoTo Focused Delivery Program: I/O

Inline – Analog Output Modules

	<p>1 or 2 channel modules available. Spring-cage wired. Voltage and Current Output available. 16-bit resolution. Easy to set up.</p>
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

Features

- Wiring terminals easily removed to allow module replacement without rewiring
- Adjustable resolution
- Programmable output formats
- High-speed processing available
- Only 1 data register required to configure module

Technical Data

R-IB IL AO 2/U/BP-PAC	
Analog outputs	
Number	2 single-ended outputs
Current ranges	–
Voltage ranges	–10 to +10 V/0 to +10 V
Output load	
Resolution	16 bits
Process data update including conversion time of D/A converter	< 1 ms
Actuator connection type	2-wire connection
Electric data	
Logic voltage U_L	7.5 V
Power consumption from local bus U_L	Typ. 33 mA, max. 40 mA
Peripheral supply voltage U_{ANA}	24 V DC
Power consumption at U_{ANA}	Typ. 25 mA, max. 35 mA
Error message to the higher level control system	Failure or logic voltage U_L not reached
Mechanical data	
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm
Protection category	IP20
Protection class	Class 3 according to VDE 0106, IEC 60536
Accessories	Connectors and labels included

GoTo Focused Delivery Program: I/O

Inline – Temperature Modules

	<p>2, 4, 8 channel modules available. Can read full range of standard thermocouples and resistive inputs. Spring-cage I/O connectors utilized for easy wiring.</p>
-----------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

- Pt, Ni, Cu, KTY, linear resistors can be used with RTD modules
- B, C, E, J, K, L, N, R, S, T, U, W, thermocouples can be used with UTH
- 2-, 3-wire inputs available depending on your needs

Technical Data

R-IB IL TEMP 2 RTD-PAC	
Analog inputs	
Number	2 inputs for resistive temperature sensors
Usable sensor types	Pt, Ni, Cu, KTY
Conversion time of A/D converter	Typ. 120 µs
Voltage input range	–
Process data update	Depending on connection method
Both channels acc. to two-wire principle	20 ms
One channel acc. to two-wire principle, one channel acc. to four-wire principle	20 ms
Both channels acc. to three-wire principle	32 ms
Limit frequency of analog filter	–
Sensor connection type	2-, 3- or 4-wire connection
Electric data	
Logic voltage U_L	7.5 V
Power consumption from local bus U_L	Typ. 43 mA
Peripheral supply voltage U_{ANA}	24 V DC
Power consumption at U_{ANA}	Typ. 11 mA
Error message to the higher level control system	Failure of supply voltage U_{ANA} , peripheral/user error
Mechanical data	
Dimensions (W x H x D)	12.2 x 135 x 71.5 mm
Protection category	IP20
Protection class	Class 3 according to VDE 0106, IEC 60536
Accessories	Connectors and labels included

GoTo Focused Delivery Program: HMI

Standard HMI

	<p>Operator Terminals with small footprints to save on panel space. Can connect to a number of 3rd party products. Recipes and other powerful capabilities available.</p>
-----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Features

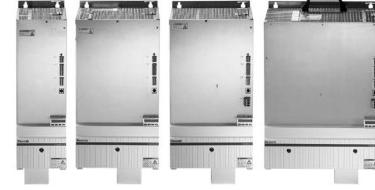
- Pushbutton and Touchscreen available
- Color and Greyscale available
- All terminals have Ethernet and USB ports

Technical Data

	VCP 08	VCP 35
Display	FSTN	TFT-Touch
	5 grey tones	65,535 colors
	3.8"	10.4"
Resolution	320 x 240	640 x 480
Keyboard/touch	Foil keys	Touchscreen
Application memory	3 MB	
Flash memory	16 MB	
Slot for expansions	1	
Line voltage	24 V DC	
Interfaces*	1 x Ethernet TCP/IP, 2 x USB host	
Front protection degree	IP65	
Dimensions (W x H x D)	155 x 205 x 55 mm	328 x 249 x 60 mm

*Additional communication options available, but not covered by GoTo program

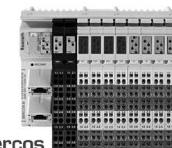
GoTo Focused Delivery Program: Part Numbers

Page Number	Part Number	Product Type	Material Description	Max. Qty.	Lead Time (Days)
		Drive Systems			
		IndraDrive Cs			
7	R911325247	Drive	HCS01.1E-W0018-A-03-B-ET-EC-NN-NN-NN-FW	4	3
7	R911325248	Drive	HCS01.1E-W0028-A-03-B-ET-EC-NN-NN-NN-FW	4	3
		IndraDrive C			
8	R911298371	Power Section	HCS02.1E-W0012-A-03-NNNN DRIVE	4	3
8	R911298374	Power Section	HCS02.1E-W0028-A-03-NNNN CONVERTER	3	3
8	R911298373	Power Section	HCS02.1E-W0054-A-03-NNNN CONVERTER	3	3
8	R911298372	Power Section	HCS02.1E-W0070-A-03-NNNN CONVERTER	3	3
9	R911308417	Power Section	HCS03.1E-W0070-A-05-NNBV CONVERTER	3	3
9	R911308419	Power Section	HCS03.1E-W0100-A-05-NNBV CONVERTER	3	3
9	R911308421	Power Section	HCS03.1E-W0150-A-05-NNBV CONVERTOR	3	3
		IndraDrive M			
10	R911298766	Dual Inverter	HMD01.1N-W0036-A-07-NNNN DUAL INVERTER	2	3
10	R911295324	Inverter	HMS01.1N-W0036-A-07-NNNN INVERTER	2	3
10	R911295325	Inverter	HMS01.1N-W0054-A-07-NNNN INVERTER	2	3
10	R911295326	Inverter	HMS01.1N-W0070-A-07-NNNN INVERTER	2	3
10	R911297164	Inverter	HMS01.1N-W0150-A-07-NNNN INVERTER	2	3
		Power Supplies			
11	R911296724	Power Supply	HMV01.1E-W0030-A-07-NNNN POWER SUPPLY	1	3
11	R911297424	Power Supply	HMV01.1E-W0075-A-07-NNNN POWER SUPPLY	1	3
11	R911296725	Power Supply	HMV01.1R-W0045-A-07-NNNN POWER SUPPLY	1	3
11	R911297426	Power Supply	HMV01.1R-W0065-A-07-NNNN POWER SUPPLY	1	3
11	R911312757	Power Supply	HMV01.1R-W0120-A-07-NNNN POWER SUPPLY	1	3

GoTo Focused Delivery Program: Part Numbers

Page Number	Part Number	Product Type	Material Description	Max. Qty.	Lead Time (Days)
		Control Section			
13	R911305274	Control Section	CSB01.1N-AN-ENS-NNN-NN-S-NN-FW	3	3
13	R911326813	Control Section	CSB01.1C-ET-ENS-NNN-NN-S-NN-FW	3	3
13	R911328178	Control Section	CSH01.1C-ET-ENS-NNN-NNN-S2-S-NN-FW	3	3
13	R911307286	Control Section	CSB01.1C-PL-ENS-NNN-NN-S-NN-FW	3	3
13	R911305277	Control Section	CSB01.1C-SE-ENS-NNN-NN-S-NN-FW	3	3
13	R911305500	Control Section	CSB01.1C-SE-ENS-EN2-NN-S-NN-FW	3	3
13	R911313871	Control Section	CSB01.1C-S3-ENS-NNN-NN-S-NN-FW	3	3
13	R911328605	Control Section	CSB01.1N-SE-ENS-NNN-L2-S-NN-FW	3	3
13	R911327682	Control Section	CSH01.3C-PL-ENS-NNN-CCD-NN-S-NN-FW	3	3
13	R911305537	Control Section	CSH01.1C-SE-ENS-NNN-NNN-NN-S-NN-FW	3	3
13	R911329606	Control Section	CDB01.1C-S3-ENS-ENS-NNN-NNN-L2-S-NN-FW	3	3
		Firmware options			
14	R911328698	Drive Firmware	FWA-INDRV*-MPB-07VRS-D5-0-NNN-NN	3	3
14	R911318477	Drive Firmware	FWA-INDRV*-MPB-05VRS-D5-1-NNN-NN	3	3
14	R911318479	Drive Firmware	FWA-INDRV*-MPB-05VRS-D5-1-SNC-NN	3	3
14	R911328706	Drive Firmware	FWA-INDRV*-MPB-07VRS-D5-1-NNN-NN	3	3
14	R911328708	Drive Firmware	FWA-INDRV*-MPB-07VRS-D5-1-SNC-NN	3	3
		IndraDyn S			
15	R911306060	MSK - Motor	MSK040C-0600-NN-M1-UG0-NNNN MOTOR	3	3
15	R911316056	MSK - Motor	MSK061C-0600-NN-M1-UG0-NNNN MOTOR	3	3
15	R911315467	MSK - Motor	MSK070D-0300-NN-M1-UP0-NNNN MOTOR	3	3
15	R911312896	MSK - Motor	MSK100D-0300-NN-M1-AP0-NNNN MOTOR	2	3
15	R911317226	MSK - Motor	MSK101E-0300-NN-M1-AG0-NNNN MOTOR	2	3
		Motion Control PAC			
		IndraControl L			
16	R911171363	IndraControl L25	CML25.1-3N-400-NN-NNC1-NW	1	3
	R911331629	IndraMotion MLC Firmware	FWA-CML25*-MLC-11VRS-D0	1	3
16	R911170828	IndraControl L45	CML45.1-3P-500-NA-NNNN-NW	1	3
	R911299856	Connector Set	R-IB IL CML S01-PLSET	5	3
17	R911331630	IndraMotion MLC Firmware	FWA-CML45*-MLC-11VRS-D0	1	3

GoTo Focused Delivery Program: Part Numbers

Page Number	Part Number	Product Type	Material Description	Max. Qty.	Lead Time (Days)
		I/O			
		Inline (IP20)			
18	R911170789	Power Module	R-IB IL 24 PWR IN-PAC	3	1
18	R911170790	Power Module	R-IB IL 24 SEG/F-PAC	3	1
18	R911170710	Power Module	R-IB IL 24 SEG/F-D-PAC	3	1
19	R911170875	Bus Coupler	R-IL S3 BK DI8 DO4-PAC	3	1
19	R911170402	Bus Coupler	R-IL PB BK DI8 DO4-PAC	3	1
20	R911170751	Digital Input Module	R-IB IL 24 DI 8-PAC	3	1
20	R911170752	Digital Input Module	R-IB IL 24 DI 16-PAC	3	1
20	R911170753	Digital Input Module	R-IB IL 24 DI 32/HD-PAC	3	1
21	R911170754	Digital Output Module	R-IB IL 24 DO 2-2A-PAC		
21	R911170756	Digital Output Module	R-IB IL 24 DO 8-PAC	3	1
21	R911170759	Digital Output Module	R-IB IL 24 DO 8-2A-PAC	3	1
21	R911170757	Digital Output Module	R-IB IL 24 DO 16-PAC	3	1
21	R911170768	Digital Output Module	R-IB IL 24 DO 32/HD-PAC	3	1
22	R911170758	Digital Output Module	R-IB IL 24/230 DOR4/W-PAC	3	1
23	R911170784	Analog Input Module	R-IB IL AI 2/SF-PAC	3	1
24	R911170786	Analog Output Module	R-IB IL AO 2/U/BP-PAC	3	1
25	R911170785	Temperature Module	R-IB IL TEMP 2 RTD-PAC	3	1
		HMI			
		Standard HMI			
26	R911311497	IndraControl VCP08	VCP08.2DTN-003-NN-NN-PW	3	1
26	R911171110	IndraControl VCP35	VCP35.2ECN-003-NN-NN-PW	3	1
		Additional Components			
	R911306007	Basic Kit	HAS01.1-065-NNN-CN	4	1
	R911306008	Basic Kit	HAS01.1-105-NNN-CN	4	1
	R911306330	Shield Kit	HAS02.1-001-NNN-NN	4	1
	R911306106	Shield Kit	HAS02.1-002-NNN-NN	4	1
	R911306331	Shield Kit	HAS02.1-003-NNN-NN	4	1

GoTo Focused Delivery Program: Notes

Bosch Rexroth Canada

490 Prince Charles Drive South
Welland, ON L3B 5X7
Phone 905-735-0510
Fax 905-735-5646
info@boschrexroth.ca
www.boschrexroth.ca

5345 Goring Street

Burnaby, BC V5B 3A2
Phone 604-205-5777
Fax 604-205-6944

725 rue Delage

Longueuil, QC J4G 2P8
Phone 450-928-1111
Fax 450-928-0903

8035 Coronet Road

Edmonton, AB T6E 4N7
Phone 780-466-5466
Fax 780-463-0964

2691 Blvd du Royaume

Saguenay, QC G7X 7V3
Phone 418-548-2366
Fax 418-548-4238

235 Venture Crescent

Saskatoon, SK S7K 6N8
Phone 306-242-1172
Fax 306-242-5754

385 Wilsey Road, Unit 10

Fredericton, NB E3B 5N6
Phone 506-458-1004
Fax 506-458-5534

3426 Mainway Drive

Burlington, ON L7M 1A8
Phone 905-335-5511
Fax 905-335-4184

94 Trider Crescent

Dartmouth, NS B3B 1R6
Phone 902-468-4500
Fax 902-468-2228